# Hacking API - GraphQL #2

Graph Query Language, API that allows client to define the structure of the data they want actually

## GraphQL = Restful

Graphql follows all 6 constrant of RestAPI. It takes approach of being query-centric because it is structured to functions similarly to a database query language like SQL

Find URL where hosted & Submit authorized req. that contains query parameter as body of POST req. to access GraphQL API.
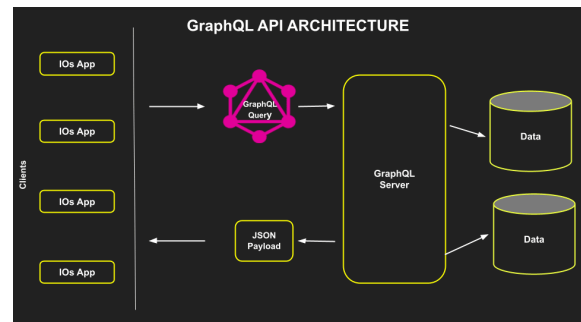
like :-

```
query{
  users{
    username
    id
    email
  }
}
                  REQ.
```

```
{
"data":{
"users":{
"username":hapi_hacker
"id":1111
"email":APi@email.com

}
```

In Graphql Request, the body of the POST req. is what the provider process



In Below Example, GraphQL req. & res. depicting a req. to check store's inventory of graphic card

```
POST /graphql HTTP/1.1
HOST: graphql-shop.com
Authorization: Bearer ab4dtok3n

{query①{
  inventory②{(item:"Graphics Card"){
name
fields③{
price
quantity
}
}                REQ.
}
}
```

```
HTTP/1.1 200 OK
Content-type: application/json
Server: GraphqlServer

{"data":{
"inventory":{
"name":"Graphics Card",
"fields":④[
"price":"999.99"
```

```
        }
        }                RES.
```

```
  "quantity":25
        }
      ]
    }
  }
}                    RES.
```

unlike GraphQL consumers REST API needs to filter out the data if consumer only need to a specific value but

- GraphQL API let client request specific fields from a resource
- GraphQL Also Uses HTTP, But it depends on a single entry point (URL) using the POST method

As you See In the Above Example :-

1, which is equivalent to GET req. & used to obtain info. from API

2, is also known as root query type

3, similar to key/ value pair in REST. The main difference is that we can specify the specif field we are looking for

4, Instead of getting item ID, item name, and other superfluous info. , The Query resolved with only field we needed

GraphQL uses **3 operations** within the **POST request** to interact with GraphQL APIs: query, Mutation & Subscription.

- Query: operation to retrieve data (read)
- Mutation: is an operation used to submit and write data (create, update and delete).
- Subscription: is an operation used to send data (read) when an event occurs. Subscription is way for Graphql client to listen to live updates from the server.

## How do you know the structure or info. need to query the GraphQL API?

GraphQL uses **Schemas**, a collection of the data that can be queries with the given service. Having Access to the GraphQL **schemas** similar to having access to a REST API collection.

A Graphql **schema** will provide you with the information you'll need in order to query the API.